

Forestan Report

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Survival In A World Of Impending Doom



By Marshall Thomas, President of F&W Forestry Services, Inc.

Nothing describes our current situation better than the old tale of the Sword of Damocles. Damocles takes the throne of a ruler, whose position he covets, only to find that he sits in a throne below a sword that is held aloft by one lone horsehair. After a day of sitting under the sword, enjoying the benefits of the royal life but living with the constant fear that the horsehair will break and the sword fall onto him, Damocles asks to return to his former life.

In our modern culture, this old tale has come to represent a sense of impending doom. I think we are all living in that condition now. So far the business of owning and managing

Southern Timber Prices

2020 SECOND QUARTER PINE & HARDWOOD STUMPAGE PRICE RANGE* (TONS)

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	PINE	PINE SMALL SAWTIMBEF	PINE LARGE SAWTIMBEF	HARDWOO! PULPWOOE	HARDWOOI SAWTIMBEF
SOUTHEAST					
LAFAYETTE, AL	\$4-10	\$11-17	\$18-26	\$6-12	\$21-36
GAINESVILLE, FL	\$11-24	\$21-26	\$26-33	\$1-10	\$12-32
MARIANNA, FL	\$9-12	\$18-20	\$28-30	\$8-10	\$28-34
ALBANY, GA	\$7-12	\$15-22	\$24-36	\$2-8	\$15-35
MACON, GA	\$7-10	\$15-20	\$23-28	\$6-9	\$18-40
STATESBORO, GA	\$12-23	\$18-25	\$25-31	\$8-14	\$22-38
FOUNTAIN INN, SC	\$7-11	\$14-19	\$19-25	\$7-9	\$20-40
CENTRAL REGION					
CLINTON, TN	\$4-9	NA	NA	\$3-5	\$25-52
PARIS, TN	NA	\$7-9	NA	\$3-5	\$45-65
WEST GULF					
EL DORADO, AR	\$3-5	\$9-11	\$21-29	\$3-5	\$28-50
CORINTH, MS	\$4-6	\$14-16	\$18-23	\$8-10	\$37-47
HUNTSVILLE, TX	\$5-6	\$8-17	\$19-25	\$5-6	\$28-30
TEXARKANA, TX	\$7-9	\$12-14	\$24-29	\$5-7	\$28-50
MID ATLANTIC					
CHARLOTTESVILLE, VA	\$7-11	\$14-18	\$18-23	\$1-4	\$14-36

^{*}All prices based on sales handled by or reported to F&W offices. If no sales occurred, prior quarter's sales and other data are used to compile price range. Price ranges are due to different locations, timber quality, logging conditions, type of harvest, and local market conditions.

timberland has done okay, but all of us are concerned about the virus' long-term economic impact. Unlike Damocles, we can't ask to return to our normal lives, we just have to figure this one out.

To date, the forest sector has seen mixed impacts of the virus. There were 700,000 tons of tissue manufactured in March, the highest monthly figure since pre-recession 2007. But commercial and writing paper were down. Lumber production nosedived in March but is now recovering. Pellets mostly held their own. But the critical link between our forests and the mills—the logger—has taken a pretty hard hit (see page 4).

Housing starts took a nosedive to around 900,000 units in March, but then rose to nearly one million in April. And sales of newly built homes rose 16.6 percent from April to May and were 12.7 percent above a year ago.

What we all need to know—and won't until it's over—is whether we will see a V-, U-, L-, or W-shaped recovery. Of course, we all want to see a V, meaning the drop will be fast and the recovery as fast, and there are some signs that may be the case, but we won't know for a couple of years. At F&W, we are worried that we are going to see a W—a quick recovery followed by another drop when we feel the real economic impacts of the shutdown, unemployment, and failure of many businesses to successfully reopen.

The sword never fell onto Damocles and let's hope that is the case with us and we have a V-shaped recovery.

On a positive note, there is more movement towards being able to monetize our carbon impact. Importantly, a Forest Service report tracking carbon sequestration in forest ecosystems finds that U.S. forests capture 95 percent of the land-based sequestration, offsetting 11 percent of U.S. greenhouse gas emissions, and that much of the harvested timber is converted to products that permanently or semi-permanently keep the carbon stored. This is good news and I hope this report will help our politicians to better understand what forests are already doing (see page 6).

Amazon has committed \$10 million to help small landowners sequester carbon in a cost-effective way by

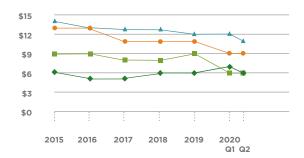
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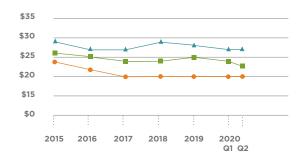
Southern Timber Prices

TIMBER STUMPAGE PRICE AVERAGES ACROSS F&W'S SOUTHERN REGION

PINE PULPWOOD AVERAGE (TONS) ▲ SOUTHEAST / ◆ CENTRAL REGION / ■ WEST GULF / ● MID ATLANTIC

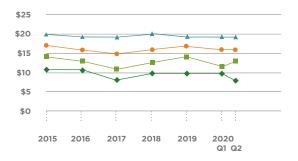


PINE LARGE SAWTIMBER AVERAGE (TONS) ▲ SOUTHEAST / ■ WEST GULF / ● MID ATLANTIC

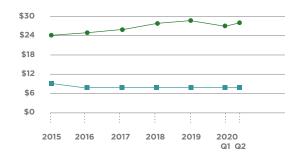


PINE SMALL SAWTIMBER AVERAGE (TONS) ▲ SOUTHEAST / ◆ CENTRAL REGION / ■ WEST GULF / ● MID ATLANTIC

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SOUTHEAST HARDWOOD PRICES (TONS) ■ HARDWOOD PULPWOOD / • HARDWOOD SAWTIMBER





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PO Box 3610, Albany, GA 31706-3610 (229) 883-0505 / fax (229) 883-0515 www.fwforestry.net

Marshall Thomas, President **Jeff Jordan, Chief Operating Officer** Jody Strickland, Chief Business Officer Sonya Farmer, Chief Financial Officer

The F&W Forestry Report is produced by: Bates Associates / PO Box 191386 Atlanta, GA 31119-1386 / (770) 451-0370 bbates@batesassociates.net

INTERNATIONAL OFFICES

Fountains Forestry UK, Ltd F&W Uruguay Scotland Brazil England

Cabinet Coudert

AFFILIATED COMPANIES

Stuntzner Dallas, OR

REGIONAL OFFICES

LaFayette, AL (334) 864-9542

(870) 864-8092

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> Huntsville, TX Chris Bartley (936) 435-9223

Albany, GA Chad Hancock Doug Hall

(229) 883-0505 Herkimer, NY Tupper Lake, NY Tom Gilman

(518) 359-3089

Montpelier, VT Jeff Langmaid (802) 223-8644

Eatonton, GA Nathan Fountain (229) 343-8033

Strattanville, PA Joe Glover (814) 764-6426

Charlottesville, VA

Glen Worrell (434) 296-1464

INVENTORY, MAPPING & PLANNING Jeff Jordan / (229) 883-0505 x136

FINANCIAL REPORTING Sonya Farmer / (229) 883-0505 x138 **QUALITY ASSURANCE/CERTIFICATION** Stephen Logan (229) 883-0505 x148

FOREST OPERATIONS Brent Williamson / (229) 407-0227



PRINCIPAL BROKER Jody Strickland (478) 954-8058

MANAGING BROKER, NORTH Michael Tragner

(802) 223-8644

MANAGING BROKER, SOUTH Rob Routhier (229) 883-0505 x123

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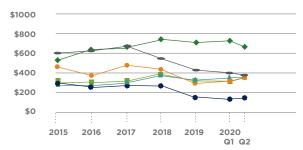
Northern Timber Prices

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	RED OAK (MBF)	BLACK CHERRY (MBF)	HARD MAPLE (MBF)	SOFTWOOD SAWTIMBER (MBF)	HARDWOOD PULPWOOD (TONS)	SOFTWOOD PULPWOOD (TONS)
RUMFORD, ME ¹	\$250-375	NA	\$225-425	\$40-150	\$3-9	\$2-4
MONTPELIER, VT 1	\$225-400	NA	\$250-425	\$45-140	\$2-7	\$1-3
GLENS FALLS, NY 1	\$225-500	\$300-650	\$325-550	\$40-125	\$5-7	\$3-6
HERKIMER, NY 1	\$250-625	\$300-650	\$425-650	\$35-125	\$3-6	\$2-5
TUPPER LAKE, NY 1	NA	\$250-400	\$300-450	\$80-120	\$4-6	\$3-5
CLARION, PA D	\$524-705	\$650-940	\$510-660	NA	\$1-2	\$0-0
BLUEFIELD, WV D	\$140-175	\$150-185	\$200-265	NA	\$1-3	\$0-1

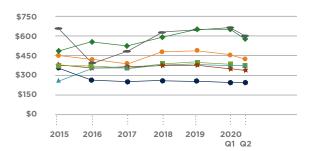
are due to different locations, timber quality, logging conditions, type of harvest, and local market conditions. (D) = Doyle (I) = International (S) = Scribner

TIMBER STUMPAGE PRICE AVERAGES ACROSS F&W'S NORTHEAST REGION

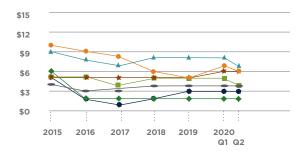




HARD MAPLE AVERAGE (MBF) ▲ RUMFORD, ME / • GLENS FALLS, NY / • HERKIMER, NY / • CLARION, PA ■ MONTPELIER, VT / ● BLUEFIELD, WV / ★ TUPPER LAKE, NY

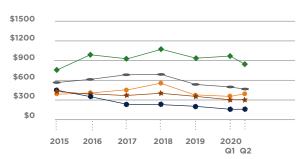


HARDWOOD PULPWOOD AVERAGE (TONS) ▲ RUMFORD, ME / • GLENS FALLS, NY / • HERKIMER, NY / • CLARION, PA ■MONTPELIER, VT / ● BLUEFIELD, WV / ★ TUPPER LAKE, NY

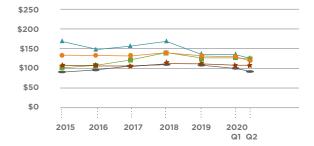


BLACK CHERRY AVERAGE (MBF)

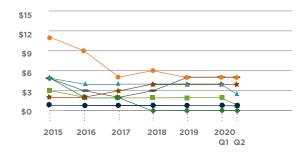
- GLENS FALLS, NY / → HERKIMER, NY / ★ TUPPER LAKE, NY / ◆ CLARION, PA
- BLUEFIELD, WV



SOFTWOOD SAWTIMBER AVERAGE (MBF) ▲ RUMFORD, ME / • GLENS FALLS, NY / • HERKIMER, NY ■MONTPELIER, VT / ★ TUPPER LAKE, NY



SOFTWOOD PULPWOOD AVERAGE (TONS) ▲ RUMFORD, ME / • GLENS FALLS, NY / • HERKIMER, NY / • CLARION, PA ■ MONTPELIER, VT / ● BLUEFIELD, WV / ★ TUPPER LAKE, NY



Forestry Sector Holds Steady During Coronavirus Pandemic

Economies around the world faltered due to the impact of the COVID-19 pandemic and almost all industries were affected in one way or another. The National Bureau of Economic Research made official in June what most folks already knew—that the U.S. entered a recession in February, marking the end of a 128-month expansion.

The forest products sector remained reasonably strong during the initial wave of the pandemic, which was deemed an essential industry in many areas of the country. This sector was buoyed by unusually high demand for toilet paper and paper towels, face masks and medical gowns, disinfecting wipes, packaging, and wood products for home renovations projects, just a few of the products experiencing an uptick in demand in the early spring months.

Following are snapshots on how the different forestry sectors fared during the initial months of the pandemic.

PULP, PAPER & PACKAGING:

Some sectors of the pulp, paper, and packaging industry performed better than others during the initial phase of the COVID-19 pandemic. March pantry stocking by consumers drove panicbuying for packaged food, cleaning

supplies, bathroom tissues and paper towels, and other household products. This benefited tissue and packaging makers and helped to offset losses from commercial businesses, such as hotels and food service sectors. The American Forest & Paper Association reports that U.S. tissue mills manufactured nearly 700,000 tons of tissue in March, more than any other month since 2007. But the shuttering of schools and businesses along with the shift to working from home was felt by the commercial writing and printing paper industry.

WOOD PRODUCTS: At the onset of the pandemic, lumber mills were quick to curtail production, with some shutting down temporarily and others for good. The Wall Street Journal reports that North American lumber production declined by a third in April. The aggressive supply cuts from big producers such as West Fraser, Canfor, and Interfor caused a tightening of lumber supplies. Contrary to what was expected, people sheltering in place decided to take advantage of the time at home to tackle home renovation and repair projects, leading to a surge in demand for lumber products. During the pandemic, lumber futures rose almost

33 percent from March 31 to reach a high of \$369 on May 29, according to Bloomberg.

WOOD PELLETS: The U.S. pellet export market held up well during the pandemic. Exports of wood pellets in April, the latest data available, were at 595,166 metric tons, up from the same month a year ago but down 11 percent from March exports of 670,464 metric tons. The value of U.S. wood pellets exported in April was \$82.55 million, up from \$60.27 million a year ago but down from \$84.06 million in March. During the first four months of 2020, the U.S. exported a total of 2.31 million tons of pellets, compared to 1.96 million tons for the same period in 2019.

LOGGING: With wood yards full and mills taking down time, logging companies and timber haulers felt the impact of reduced or lost markets due to the COVID-19 pandemic. When combined with high operating costs and low returns on investments, this reduction in wood demand threatens the viability of logging and log hauling businesses and could result in the loss of capacity. The industry has asked Congress to provide \$2.5 billion in direct federal assistance.

Housing Rebounds While Economy Slowly Warms Up

While most housing indicators are down year-over-year, it appears the housing market may be at the forefront of the emerging economic rebound following the recession caused by the COVID-19 pandemic.

As 2020 got underway, it finally looked as if the housing industry was poised to make its long-awaited comeback. In January, housing starts were at a seasonally adjusted annual rate of 1.617 million units, its highest level since December 2006. But the pandemic hit, causing a sudden collapse in the economy that impacted almost every sector of business. Home construction plummeted due to

shelter-in-place orders, illness, supply disruptions, and because construction in some states was shut down.

But with states easing restrictions, the housing market appears to be recovering quickly, although it continues to be constrained.

After the January high, housing starts tumbled to an annual rate of 934,000 units in April, its lowest point since February 2015. But in May, the seasonally adjusted annual rate rose to 974,000 units, 4.3 percent above April but still 23 percent below May 2019.

Building permits, an indicator of future construction, mirrored this trend. They began the year at a seasonally adjusted rate of 1.536 million units but dropped steadily until reaching a low in April of 1.066 million units. In May, permits rose 14.4 percent from the previous month to a seasonally adjusted annual rate of 1.22 million units, but it was still 8.8 percent below the May 2019 rate.

"We are seeing many positive economic indicators that point to a recovery, including low interest rates, rising demand, and an increase in mortgage applications," said Dean Mon, the immediate past chairman of the National Association of Home Builders (NAHB) and a home builder from

(continued on page 5)

Survey Provides Insights Into Management Practices

A new survey of forest management trends and silviculture practices in the Southern Pine Belt affirms that private landowners are committed to active forest management and using the latest technologies.

The survey of private timberland owners and managers in the U.S. South was conducted by Athens, Ga.based Forisk Consulting. The survey tracked the intensity, variance, costs, and results associated with common silviculture practices completed in calendar year 2019.

"As the forest industry faces economic turmoil and uncertainty, the results from this survey affirm the continued commitment and interest in active forest management, optimizing investment returns, and the application of new technologies as they become available," Forisk said in a news release. "Large landowners and forest managers are achieving strong yields across the South through targeted management regimes employing improved genetic stock, competition control, and fertilization."

Companies that own or manage timberland in the South, including

publicly-traded REITs, Timberland **Investment Management Organizations** (TIMOs), forestry consultants, and private landowners, were contacted to participate in the survey. In total, 35 firms accounting for 28.3 million timberland acres participated in the survey.

The survey divided the South into four regions to distinguish potential differences in forest management practices across the physiographic provinces. The report compared silviculture treatments, including site preparation, planting, harvesting, and fertilization across the four regions stretching from East Texas and Oklahoma to Virginia.

Key findings from the survey are:

- Chemical site preparation was deployed on 61 percent of acres in 2019, by far the most common method. Mechanical site prep methods were second most common, comprising single and double bedding, used almost exclusively in the Coastal Plain, and other mechanical treatments
- Southwide, firms planted 531 trees per acre (TPA) with an 88 percent survival rate. This marks the second

consecutive survey in which reported planting density had dropped.

- Second generation loblolly pine seedlings remain the most common seedling type planted in 2019, though combined acres of more advanced loblolly genetics, including both control mass pollinated (CMP) seedlings and third generation loblolly, covered slightly more area.
- Overall, 84 percent of managers reported using herbaceous weed control.
- Nearly 60 percent of managed acres across the South receive a fertilization treatment at some point in their rotation, with fertilized acres averaging 1.5 applications per rotation.
- Acres in the Lower Coastal Plain required more intensive silviculture, with more than 40 percent greater silviculture expenditures per acre per year than the average across the South.
- The average clearcut age of stands in 2019 was 29 years. Respondents report using a two-thinning regime on 39 percent of acres under management.

Housing Rebounds (continued)

Shrewsbury, N.J. "Single-family and multifamily housing production are on an upward path while overall permits, which are a harbinger of future building activity, posted a double-digit gain."

In another sign that the housing market is rebounding from the pandemic, sales of newly built, singlefamily homes rose 16.6 percent from April to May to a seasonally adjusted annual rate of 676,000 units. The May rate is 12.7 percent above the same month a year ago.

It remains to be seen if this trend will continue. With unemployment reaching record levels and consumer spending low, home builders are justifiably worried about what demand will look

like in the months ahead. But this recession was caused by the pandemic and is vastly different from the housing bust and financial crisis of the Great Recession.

The Wall Street Journal reports that there are early signs that a V-shaped economic recovery is emerging.

"After bottoming out in April, economic activity has continued to rise into early June," the paper reported. "Whether the recovery can continue at this pace remains clouded by uncertainty over future fiscal stimulus, resurgent infections and the drag of unprecedented job loss on consumer finances. Nonetheless, an L-shaped recovery, in which activity stays

depressed, now looks remote. And while the overall recovery may not end up a V, it may also be less feeble than many had feared."

Mon said housing stands poised to lead an economic recovery, provided businesses can reopen, the virus slows, and lawmakers implement the right policies.

"As the housing sector enters this recession underbuilt, it is an industry with both pent-up housing demand and sensitivity to low interest rates, which places it in a good position to recover more quickly than other sectors of the economy," he said.

U.S. Forests/Wood Products Offset GHG Emissions By 11%

A U.S. Forest Service report finds that the American forest ecosystem accounts for more than 95 percent of the "land carbon sink"—or how carbon is stored in natural systems—and offsets more than 11 percent of greenhouse gas (GHG) emissions annually.

The report provides an overview of the status and trends of GHG emissions and removals from forest land, woodlands, harvested wood products (HWPs), and urban trees between 1990 and 2018 by state. Estimates include the movement of carbon from the atmosphere into living trees, dead wood, and soil as well as emissions from soils, forest fires, and land conversions.

FOREST CARBON CYCLE

Carbon is continuously cycled among ecosystem pools and the atmosphere. The report divides the forest ecosystem into five storage pools: aboveground biomass, belowground biomass, deadwood, litter, and soil. Of these, aboveground biomass is the largest contributor to carbon capture.

"As trees photosynthesize and grow, carbon is removed from the atmosphere and stored in living tree biomass. As trees die and otherwise deposit litter and debris on the forest floor, carbon is released to the atmosphere and is also transferred to the litter, dead wood, and soil pools by organisms that facilitate decomposition," the report said.

"The net change in forest carbon is not equivalent to the net flux between forests and the atmosphere because timber harvests do not result in an immediate flux of all harvested biomass carbon to the atmosphere. Instead,

following harvesting a portion of the carbon stored in wood is transferred to a 'product pool.'"

TOTAL EMISSIONS & REMOVALS

Forest land, wood products, woodlands, and urban trees together represented an estimated net uptake (i.e., net removal) of 752.9 million metric tons of carbon dioxide equivalent from the atmosphere, equal to 11 percent of total GHG emissions annually. This was a 2 percent increase over 2017 but a 7.5 percent decrease from 1990.

The largest net sink in the land sector was the category "forest land remaining forest land." Other categories contributing to net uptake were non-forest land converted to forest land, wood products, and urban trees. Between 1990 and 2018, wood product net uptakes decreased 20 percent; urban trees net uptakes increased by 35 percent; and non-forest land converted to forest land remained fairly constant.

Conversely, the largest source of emissions in the land sector was conversions from forest land. This number remained steady from 2017 but was up 7 percent from 1990.

FORESTS REMAIN FORESTS

Within the "forest land remaining forest land" category, aboveground biomass, which consists of all living biomass above the soil including stem, stump, branches, bark, seeds, and foliage, is the largest contributor to net carbon uptake, followed by belowground live biomass (i.e., roots), and deadwood. Wood products in use and in solid waste disposal sites (SWDS) are also important contributors to the net sink,

representing approximately 15 percent total of removals.

"By maintaining current harvesting practices and regeneration activities on these forested lands, along with continued input of harvested products into the HWP pool, carbon stocks in forests are likely to continue to increase in the near term, though possibly at a lower rate," the report said. "Because most of the timber harvested from U.S. forest land is used in wood products and many discarded wood products are disposed of in SWDS rather than by incineration, significant quantities of carbon in harvested wood are transferred to these long-term storage pools rather than being released rapidly to the atmosphere."

FOREST LAND CONVERSION

The report said land conversions to and from forest land resulted in net emissions. Forest land converted to cropland, grasslands, or settlements generate more emissions than the removals resulting from the conversions of these types of land to forest land.

The states with the greatest uptakes were Mississippi, Alabama, and Oregon. The states with the highest net carbon emissions were Montana, Colorado, and Idaho.

The report, "Greenhouse Gas **Emissions and Removals from Forest** Land, Woodlands, and Urban Trees in the United States, 1990-2018," was prepared by Forest Service scientists as part of the EPA's National Greenhouse Gas Report. *

Survival (continued from page 1)

lengthening rotations, among other practices. And Congress is considering bills that would certify carbon experts and verifiers and put them in touch with small landowners (see page 7). Large landowners already have access to voluntary markets, but this is a

movement to give small landowners access. If done right, landowners may get paid to delay harvests for a period of years, and then still be able to harvest the trees—a win-win for the carbon folks and landowners.

We will, every quarter, keep you up to

date on where we think we are in this recovery. Right now, with the threat of more shutdowns due to an increase in numbers of COVID-19 cases, there is no way to assess where we are. And it may be a year and a vaccine that works before we really know anything.

Amazon Invests \$10 Million To Help Family Forests Capture Carbon

A \$10 million investment by e-commerce giant Amazon illustrates the growing interest in forestry as a strategy for addressing carbon emissions.

The grant from Amazon will fund two emerging programs focused on conserving, restoring, and supporting sustainable forestry, wildlife, and nature-based solutions across the Appalachian Mountain region in collaboration with The Nature Conservancy (TNC), the American Forest Foundation (AFF), and the Vermont Land Trust.

The programs are designed to aggregate family forests and bring them into the carbon market on a larger scale. Families and individuals own 290 million acres of America's forests, more than the federal government, forest industry, or corporations. These private forests offer a large source of climate mitigation when combined, and the programs aim to remove the barriers that currently exist that prevent smaller landowners from entering the carbon market, including large upfront costs, complexity, and long-term commitment.

"Families will be provided the tools and resources needed to assess, plan, and implement forest management practices that increase the economic and ecological values of their forests," according to the Amazon news release.

The first program, the Family Forest Carbon Program (FFCP), was co-created by the American Forest Foundation and The Nature Conservancy to enhance carbon sequestration in family forest ownerships across the U.S. AFF launched the pilot project in Pennsylvania, with plans to expand statewide next year and then throughout the central Appalachian region. According to AFF, participants may engage in one of two practices: grow mature forests by limiting

harvesting within a 20-year period to promote larger, higher-quality trees; or enhance future forests by reducing competing vegetation, thereby allowing quality trees to have the necessary space, sunlight and water to grow.

According to Nathan Truitt, AFF's vice president of Strategic Partnerships, enrolled landowners are compensated for the conservation practices they implement which generate carbon benefits over time; additionally, they receive maintenance payments for the duration of the contract, likely between ten and 30 years. Previous programs could require contracts of up to 99 years. According to Yale Environment 360, Amazon's pledge of \$7.3 million to this program will include paying for monitoring and verification costs during the pilot phase.

The second program is the Forest Carbon Cooperative, which launched in Vermont last September in partnership with the Vermont Land Trust. Similar to the FFCP, this program aims to help mid-sized forest owners use sustainable forest management and protection measures to earn income through the carbon credit market. The Amazon grant will support efforts to expand the program in climate-resilient forests across the Appalachians, develop a scientific approach to regional carbon impact measurement, and enhance the project verification methodology.

Amazon said these programs will "generate economic opportunities by creating a new source of income for family forest owners and rural communities that taps into the carbon storage potential of forests" and "achieve a net reduction of up to 18.5 million metric tons of CO2 in the atmosphere by 2031—the equivalent of 46 billion miles driven by an average passenger vehicle."

The grant is the first from Amazon's

Bipartisan Support For "Growing Climate **Solutions Act"**

A bipartisan group of U.S. senators and representatives have separately introduced legislation in Congress to create a certification program at the U.S. Department of Agriculture (USDA) to help forest landowners, farmers, and ranchers navigate carbon markets and eliminate some of the barriers that curb access to these markets.

The goal of the Growing Climate Solutions Act is to make it easier for private landowners to participate in carbon markets and provide them with an opportunity to generate new revenue.

Components of the bill specify for USDA to:

- Certify technical assistance providers, who can assist in implementing practices to sequester carbon, and connect them to landowners:
- Certify third-party verifiers, who can substantiate that emissions were reduced: and
- Administer a website guiding landowners through this process.

The Senate bill is sponsored by Sens. Mike Braun (R-Ind.), Debbie Stabenow (D-Mich.), Lindsey Graham (R-S.C.), and Sheldon Whitehouse (D-R.I.). The House version was introduced by Reps. Abigail Spanberger (D-Va.) and Don Bacon (R-Neb.).

\$100 million Right Now Climate Fund, which it announced in September 2019. Working in partnership with TNC, the initiative aims to restore and conserve forests, wetlands, grasslands, and peatlands around the world with a focus on removing carbon from the atmosphere. Amazon also launched The Climate Pledge, committing that it will become carbon neutral by 2040, a decade ahead of the 2050 Paris Accord deadline, and urging other companies to join the initiative. •



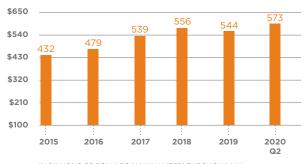


TIMBER MARKET INDICATORS

HOUSING PERMITS



RESIDENTIAL CONSTRUCTION



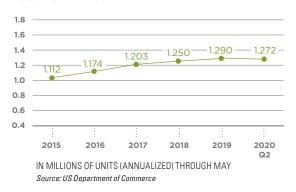
IN BILLIONS OF DOLLARS (ANNUALIZED) THROUGH MAY

Source: US Department of Commerce

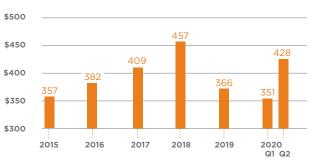
MORTGAGE RATES



HOUSING STARTS



LUMBER PRICES



SOUTHERN PINE—\$/MBF
Source: Random Lengths Southern Pine Composite Index

US DOLLAR



US DOLLAR VALUE AGAINST 26 MAJOR TRADING PARTNERS Source: Federal Reserve